

IEEE SWITCHGEAR COMMITTEE CORRESPONDENCE

Minutes: IEEE High-Voltage Fuses Subcommittee
Place: St. Pete Beach, FL
Date: Wednesday, May 2nd 2012
Presiding officer: John Leach - Chair
Recorder: Frank Muench - Secretary

MEMBERS PRESENT

G. Borchardt	S & C Electric Company
G. Haynes	ABB Inc.
J. G. Leach	Consultant - T&B/Hi-Tech Fuses
Chris Lettow	S&C Electric Company
Sean Moody	Mersen
F. J. Muench	Cooper Power Systems
R. N. Parry	Eaton
M. Stavnes	S & C Electric
Alan Yerges	Cooper Power Systems
J. Zawadzki	Powertech Labs Inc.

MEMBERS ABSENT

D. Gardner^	Thomas & Betts – Hi-Tech
J. R. Marek^	Consultant
D. Parker	Alabama Power
T. E. Royster^	Dominion Virginia Power
^ Excused	

GUESTS

Doug Fitchett	American Electric Power
Jon Spencer	T&B
Charles Worthington	Hubble Power Systems

HONORARY MEMBERS

J. G. Angelis, R. L. Capra, S. P. Hassler, F. Ladonne, R. Ranjan, J. S. Schaffer

- 1. Call meeting to order** - at 1:30 PM
- 2. IEEE Patent policy** – Presented and reviewed. Slides shown
- 3. Member/guest introduction** – 10 members 6 guests
- 4. Roster check**– roster circulated for correction. Chair John Leach suggested that, in line with Switchgear committee practice, we introduce the category of “honorary member”. This would include members who are retired or no longer active in the subcommittee, but who have completed a number of years service to the subcommittee and its working groups. This would reduce the possibility of not achieving a quorum, since, if the proposals in the Switchgear Committee to move PAR and Ballot start approval to the subcommittees is passed, it will be helpful for subcommittees to be able to make such decisions at their twice yearly meetings. A motion to accept this proposal was made by Neville Parry, seconded by Mark Stavnes, and passed unanimously (this is reflected in the “honorary member” category listed above).
- 5. Approval of Agenda** – the agenda was approved as circulated.

6. **Approval of October 12th 2011 minutes** – Reviewed and approved without change.

7. **Report from the Chair:** – will be covered in later agenda items.

8. **Standards status report:** Attached as Annex “B”. Summary:

- a. C37.42 – PAR consolidate C37.43, C37.46, and C37.47
- b. C37.47 Published in February
- c. C37.48.1 Published in April
- d. The others are current
- e. C37.45 was coming due, new policy moves time before work is needed. See 9 for further information.

9. Working Group Reports

a. **Revision of Fuse Specification Standards – M. Stavnes.** Mark reported that:

- 1) With the approval of a PAR to combine C37.42, C37.43, C37.45, C37.46, C37.47 into a new version of C37.42, the new working group had its first meeting on May 1st with 13 members present and 4 guests. This was a joint meeting with members of the Revision of Fuse Standards Working group, to plan the direction that all fuse standards should take.
- 2) He reported that IEEE Std. C37.47, IEEE Standard Specifications for High- Voltage (>1000 V) Distribution Class Current-Limiting Type Fuses and Fuse Disconnecting Switches was approved on 9/10/11 and was published on 02/03/12.
- 3) The Working Group, in conjunction with the Revision of Fuse Standards Working Group, discussed coordination and planning for the details of moving first to two separate documents, one covering testing and the other specifications for most of our devices, as approved by the HVFSC last year, and then eventually to one main specification and testing document. The basic structure agreed was as follows:
 - C37.40 – Definitions
 - C37.41 – Testing (with devices not conveniently aligned with IEC documents moved to Normative Annex)
 - C37.42 – Specifications (with devices not conveniently aligned with IEC documents moved to Normative Annex)
 - C37.45 – Air Switches (self-contained document – definitions, specifications and tests)
- 4) The group was given a presentation by Working Group member Frank Lambert on the NEETRAC activities related to polymer insulated cutouts. This included proposed additions to the next revision of C37.41 for these devices.
- 5) A motion from the Working Group was made:

The Revision of Fuses Specification Standards Working group recommends to the HV Fuses Subcommittee, that our documents be organized in the following manner:

1. C37.41 includes expulsion fuse, current-limiting fuse, and capacitor fuse testing with as much separation as is convenient
2. C37.42 includes expulsion fuse, current-limiting fuse, and capacitor fuse specifications with as much separation as is convenient
3. Devices that do not generally conform to IEC testing requirements (namely open-link cutouts, slant-rated cutouts, liquid-submerged expulsion type indoor

power class fuses, and the historical testing of Motor-starter current-limiting fuses) are moved to normative annexes in C37.41 and C37.42

4. That all testing, specifications, definitions, etc. associated with Distribution class enclosed single-pole air switches are moved into C37.45.

The Motion passed unanimously.

b. Revision of Fuse Standards - J. G. Leach. John reported that:

1. The group (technically a Task Force since no PAR is current) met Wednesday 2/5/2012 with 18 members and 1 guest.
2. C37.48.1 was published in April.
3. The group began work to develop and request the committee allow opening a PAR for the revision of C37.41 and C37.40, with a decision being made (after the RFSS meeting) to recommend moving definitions from C37.40 into the updated C37.41. All testing except that for distribution enclosed single-pole air switches will be included. It was proposed that the Revision of Fuse Specification Standards WG have the responsibility of obtaining a PAR to revise C37.45. These proposals were approved by the Subcommittee.
4. A task force, as a sub group within the RFS WG, was established to make proposals for testing requirements for polymer cutouts to be included in the revision of C37.41. It will be chaired by Chris Lettow, with initial membership of G. Borchardt, D. Fitchett, G. Haynes, F. Lambert, F. Muench, N. Parry, C. Worthington, and Alan Yerges.
5. A motion was made to authorize the WG group for C37.42 to move appropriate definitions and specifications from C37.40 into the new C37.42. This was also approved unanimously.
6. The exact wording for these PARs will be included in separate document to the members of the High-Voltage Fuse Subcommittee.

10. Report of liaison to other committees

a) ER&P Committee – J. G. Leach:

1. Mark Stavnes, the chair of the RFSS WG was presented the IEEE PES Technical Committee Working Group Recognition Award for the WG's work on transferring C37.42, 43, 45, 46, and 47 from NEMA to IEEE.
2. Awards to individuals were delivered to members who will not attend the main committee meeting. Others will receive the award at the committee meeting.
3. We are struggling to get papers, with effective depth for acceptance. We are encouraged by ER&P to generate those papers. A suggestion is that a subcommittee commission a paper each time a standard is created or revised.

11. Report of IEC activities - J. G. Leach:

John reported on IEC activities - the full TAG report is attached as Annex "A".

12. Unfinished business – None

13. New business – Permission to apply for the following PAR's will be requested from Switchgear committee (although there will be a proposal to allow subcommittees to approve submission of PARs, this will not occur until after the consent agenda for approval of PARs):

1. C37.41-IEEE Standard for High-Voltage (>1000 V) Fuses and Accessories (to combine C37.40 and C37.41)
2. Revision of PAR for C37.42 - IEEE Standard Specifications for High-Voltage (>1000 V) Fuses and Accessories (to combine IEEE C37.42, C37.43, C37.46, and C37.47)

3. C37.45-IEEE Standard for High-Voltage (>1000 V) Distribution Class Enclosed Single-Pole Air Switches (to incorporate definitions, testing and specifications for Distribution Class Enclosed Single-Pole Air Switches)

Note – the final document titles have yet to be confirmed – Switchgear Committee approved this action

14. Next meetings:

Fall 2012: (1 Oct – 4 Oct) Catamaran Resort Hotel, San Diego, CA.

Spring 2013 (29th April – 2 May) The San Luis Conference Center, Galveston TX

Fall 2013 (16th September – 18th September) Hilton Palacido del Rio, San Antonio TX

Spring 2014 (5 May – 8 May) Disney Contemporary Hotel, Orlando, FL.

15. Adjournment – 2:30PM

Annex “A” IEC report

SC32A - U.S.A. Technical Advisory Group

Dr. John G. Leach, Technical Advisor ♦ j.g.leach@ieee.org ♦ 828-256-3744 ♦ Fax 828-322-2376

IEC Report 2011-3 to October 2011-April 2012

From: Dr. John G. Leach, Technical Advisor SC32A, April 25th 2012



Summary

There have been no IEC meetings since the October report. Circulations of the first CD for an amendment to IEC 60282-1 and a second CD for the Tutorial and Application guide have been completed. A Committee Draft Vote document for the revision of the Capacitor Fuse standard has been finished.

MT3

A CD for an amendment to IEC 60282-1 was produced and circulated on 2011-12-23, with closing date for comments of 2012-03-23. Due to a number of critical comments (including Germany and USA on the issue of 87% voltage testing) a second CD is proposed, with a final version to be determined at the MT3 meeting in Cologne.

WG6

The second committee draft of the new Fuse Tutorial and Application Guide was completed in December 2011. In addition to changes discussed in the last report, improvements to the treatment of switch-fuse combinations and other fuse and mechanical switching arrangements were proposed and incorporated. The second CD was circulated in January 2012 with a closing date for comments of April 13th. A number of comments have been received, but most can be accommodated relatively easily. The next working group meeting is scheduled for May 21st/22nd 2012 in Germany, to review the results of this circulation. The Document that should then be issued, by December, will be a DTR (draft technical report) equivalent to an FDIS (final draft international standard), i.e. the last version circulated, with no changes possible after a vote that meets the “approved” requirements.

MT7

A Committee Draft Vote document (CDV) was prepared early in January and a French translation has been prepared in time for a circulation in May 2012.

The main changes to the present standard are:

Reducing the preferred values of rated maximum capacitive current to realistic levels (1 kA to 5 kA)
Introduction of homogeneous series rules based on IEC 60282-1 and -2
Reduction of melting time of low current breaking tests to a more feasible 10s minimum (from 3 minutes minimum)
Introduction of take-over current tests for full-range fuses
Elimination of endurance discharge tests
Numerous testing clarifications.

The next meeting of MT3 and WG6 will take place on May 21st/22nd in Cologne, Germany. John Leach plans to attend.

Other business:

John Leach has been reappointed for a further 4 year term as TA for SC32A.

John Leach, 4-25-12

Annex “B”, May 2012

Document	Title	Sub-Committee	WG Chair	PAR	IEEE Status	Activity
C37.40	Standard Service Conditions and Definitions for High-Voltage Fuses, Distribution Enclosed Single-Pole Air Switches, Fuse Disconnecting Switches, and Accessories.	HVF	John Leach 828 256 3744 j.g.leach@ieee.org		Approved 2003 R2009	None
C37.41	Standard Design Tests for High-Voltage Fuses, Distribution Enclosed Single-Pole Air Switches, Fuse Disconnecting Switches, and Accessories	HVF	John Leach 828 256 3744 j.g.leach@ieee.org		Approved 2008	PAR to be submitted
C37.42	Standard Specification for High-Voltage (>1000 V) Expulsion Type Distribution Class Fuses, Fuse and Disconnecting Cutouts, Fuse Disconnecting Switches, and Fuse Links, and Accessories Used with These Devices.	HVF	Mark Stavnes 773-338-1000, Ext. 2071 MStavnes@sandc.com	Approved 2012-16 Revision	Approved 2009	Revision to incorporate C37.43, C37.46 and C37.47
C37.43	Standard Specifications for High-Voltage Expulsion, Current-Limiting and Combination Type Distribution and Power Class External Fuses, with Rated Voltages from 1kV through 38kV, Used for the Protection of Shunt Capacitors	HVF	John Leach 828 256 3744 j.g.leach@ieee.org		Approved 2008	None
C37.45	Standard Specifications for High-Voltage Distribution Class Enclosed Single-Pole Air Switches with Rated Voltages from 1kV through 8.3kV	HVF	Mark Stavnes 773-338-1000, Ext. 2071 MStavnes@sandc.com		Approved 2007	PAR to be submitted
C37.46	Standard for High-Voltage (>1000 V) Expulsion and Current-Limiting Type Power Class Fuses and Fuse Disconnecting Switches.	HVF	Mark Stavnes 773-338-1000, Ext. 2071 MStavnes@sandc.com		Approved 2010	None
C37.47	Standard Specifications for High-Voltage (>1000 V) Current-Limiting Type Power Class Fuses and Fuse Disconnecting Switches	HVF	Mark Stavnes 773-338-1000, Ext. 2071 MStavnes@sandc.com		Approved 2011	None Published 2/2012
C37.48	Guide for Application, operation, and Maintenance of High-Voltage Fuses, Distribution Enclosed Single-Pole Air Switches, Fuse Disconnecting Switches, and Accessories	HVF	John Leach 828 256 3744 j.g.leach@ieee.org		Approved 2005 R2010	None
C37.48.1	Guide for the Application, Operation, and Coordination of High Voltage (>1000 V) Current-Limiting Fuses.	HVF	John Leach 828 256 3744 j.g.leach@ieee.org		Approved 2011	None Published 4/2012